

## SCLEROLEPIS UNIFLORA (COMPOSITAE) IN NEW ENGLAND

LESLIE J. MEHRHOFF

According to floristic manuals, *Sclerolepis uniflora* (Walt.) BSP is found in shallow water in coastal states from Alabama and Florida to New Jersey, with anywhere from 2 to 4 disjunct populations in New England (Fernald, 1950; Gleason & Cronquist, 1963; Seymour, 1969). Its distribution in New England is pertinent for phytogeographic reasons, as well as current rare plant concerns. Historic documentation of this species in New England and the actual number of stations in New Hampshire, Massachusetts and Rhode Island are clarified below.

### NEW HAMPSHIRE POPULATION

The first report of *Sclerolepis uniflora*, then called *Sclerolepis verticillata* Cass., from New Hampshire was made by Dr. Frederic T. Lewis, a physician from Cambridge, Massachusetts in the October 1905 issue of RHODORA (Lewis, 1905). Lewis wrote that "...the occurrence of this species in Bradford, New Hampshire, a town some thirty-five miles north of Massachusetts and sixty miles from the coast, is of certain interest." In the same article he gives a specific locality in that town, "At the south end of Bradford Pond..." Bradford Pond later came to be known as Lake Massasecum. He states that he collected specimens "During the first week of August (1905)...". Lewis closes his note by saying, "Specimens collected at Bradford have been deposited in the Gray Herbarium of Harvard University." Fernald (1950) cites Lake Massasecum, Bradford, New Hampshire, as the only locality in that state. Seymour, in his *Flora of New England* (1969) cites two localities in New Hampshire, Bradford and Warner. Seymour frequently cited herbaria where he found exceptional records, and if no herbarium was cited it was understood that the record was from the New England Botanical Club Herbarium. There is a specimen of *Sclerolepis uniflora* in that herbarium collected by F. T. Lewis from a "sandy bog," Warner, New Hampshire, in August 1905. There are no other Lewis collections of *Sclerolepis uniflora* nor any other collection of that species from that year. A single Lewis collection of

*S. uniflora* with exactly the same data is on deposit in the Gray Herbarium.

In October 1928, Henry K. Svenson and Merritt L. Fernald visited Lake Massasecum (Bradford Pond) while on a collection trip in the region. Svenson (1929) mentions *Sclerolepis* as still existing at the south end of Lake Massasecum, where Lewis had found it in 1905, but made no mention of a station in Warner, a few miles away.

I suspect that the confusion regarding a locality for *Sclerolepis* in Warner has arisen because Lewis could have come to Lake Massasecum directly from Warner without going near the village of Bradford, as one would do today. He may have come from Warner on roads that cross a low mountain range locally known as the Mink Hills. These roads were actively used in the early 1900's, although they are now largely impassable. The southern end of the lake lies along one of these roads, only 0.4 miles from the Warner town line. Lewis may not have realized that he was at Lake Massasecum when he collected the specimens, or that he was in Bradford instead of Warner. By the time that his note appeared in RHODORA 2 months later, he apparently clarified his exact locality and reported it in RHODODRA as Bradford. Further support is given to this hypothesis by Svenson's 1929 article because he refers only to Lake Massasecum as the New Hampshire locality for *S. uniflora*. It is conceivable that Fernald had met Lewis and had been told the correct locality, rather than learning it only from the specimen labels. In his article on *Sclerolepis uniflora* in Massachusetts, Fernald (1912) mentions Dr. Lewis's station at Bradford, not Warner, as label information would have indicated.

Other reports continue to mention Bradford as the New Hampshire locality for *Sclerolepis*. The "Preliminary lists of New England plants—XXIX" (Knowlton, *et al.*, 1925) states, "*Sclerolepis uniflora* is known from a pond in Bradford, New Hampshire. . . ." obviously discounting the Warner locality.

In 1978, while living on Lake Massasecum, I decided to look for *Sclerolepis*. On 24 Sept. 1978, J. J. Dowhan and I visited the southeast end of the lake and there found many of the associated species mentioned by both Lewis and Svenson, as well as a large stand of *S. uniflora* (over 100 individuals) which appeared to be doing well. Being advised of its appearance we soon found many more indi-

viduals in other localities around the lake. Most individuals were vegetative, and nowhere was it as abundant as at the southeast end of the lake. A small swamp exists near the southeast end of the lake and this might have been Lewis's "sandy bog."

On 3 Aug. 1981 I visited the site on Lake Massasecum and found the plants almost in flower; on 29 Aug. 1981 I found numerous individuals in flower. I noted that the population appeared to have increased in number and size and seemed to be doing very well. Vegetative, submerged specimens also were found free-floating or rooted in the lake. Since this is an amphibious, heterophyllous species, the submerged, vegetative plants are easily overlooked. It was interesting to note that where the beach was manicured for a private swimming area no plants of *Sclerolepis* existed. A sharp demarcation between the two areas could be observed.

Between 1978 and 1981 I have searched other ponds in Warner and Bradford for *S. uniflora* without success. Recently, another search of potential ponds in neighboring towns yielded nothing (D. Dunlop, pers. comm.). Considering the proximity of Lake Massasecum to the Warner town line, and the fact that in Lewis's day you could travel from Warner to Lake Massasecum without going through the village of Bradford, it is probable that the Warner locality on the Lewis specimens in the Gray Herbarium and the New England Botanical Club Herbarium is incorrect. All evidence points to only one locality for *Sclerolepis uniflora* in the state, Lake Massasecum, Bradford.

#### RHODE ISLAND-MASSACHUSETTS POPULATION

*Sclerolepis uniflora* was first discovered at Wallum Lake (then called Wallum Pond) in 1909 by J. Franklin Collins, H. W. Preston, and T. Hope (Collins, 1910). Wallum Lake straddles the Massachusetts-Rhode Island state line, with its northern part in the town of Douglas (Worcester County), Massachusetts, and its southern portion in Burrillville (Providence County), Rhode Island. Collins mentions only that his station was "...along the shore of Wallum Pond, in the town of Burrillville, Rhode Island," with no indication as to the proximity to the state line. He does not mention whether his group looked for this species on the Massachusetts end of the lake.

Because of Collins's report of this species from Wallum Lake in 1909, Merritt L. Fernald and F. F. Forbes visited the north end of the lake in Douglas, Massachusetts on 29 Oct. 1911, two years to the day after Collins had found *Sclerolepis* at the lake. They soon found the desired species within "a stone's throw of the northern end of the pond." They also found a station along the northeastern shore and "at every spring and seepy bank among boulders" along the western shore in both Massachusetts and Rhode Island (Fernald, 1912).

Fernald suggested searching other similar ponds in the vicinity for *Sclerolepis uniflora*, but no additional records seem to exist for this species, either in the literature or in the herbaria of the New England Botanical Club and Harvard University. Seymour (1969) cites only Wallum Lake, Massachusetts and Wallum Lake, Rhode Island as locations for this species in southern New England.

Stuckey (1977), in her report on the rare plants of Rhode Island says that it was found once at Wallum Lake and not seen since. Neither the report on the rare and endangered vascular plant species in Massachusetts (Coddington & Field, 1978) nor the report on the rare and endangered vascular plant species in Rhode Island (Church & Champlin, 1978) make reference to recent observations of this species at Wallum Lake or elsewhere in their respective states.

Accordingly, I visited Wallum Lake on 5 Sept. 1981 with O. Oliynyk to look for *Sclerolepis*. We followed the shoreline by canoe for much of its distance, beginning and terminating on the east side in Burrillville, Rhode Island. Although this method of search has its advantages, it does not allow for adequate coverage of every nook and cranny along the shoreline. Vegetative plants of *S. uniflora* were found between large boulders at the northern end of the Lake in Douglas, Massachusetts. There was no evidence of flowers or even buds on these plants, although from past experience with the New Hampshire population of this species, one should expect the plants to be flowering at this time of the year. Vegetative, submerged plants were also found floating in the water. Bruce Sorrie (pers. comm.) visited the lake on 24 Sept. 1981 and located *Sclerolepis* in both Massachusetts and Rhode Island along the western side of the lake, again without any signs of flowers or buds. On 13 Oct. 1983 I returned to Wallum Lake, this time in the company of Wm. Linke, to search for flowering individuals. This time we traveled by foot in

order to avoid missing any flowering material. Again, no flowering individuals were observed. The absence of flowering plants of *Sclerolepis* probably accounts for the lack of reports of this species at Wallum Lake in the past.

Copious amounts of dried algal material were observed along the shore as well as on many of the *Sclerolepis* plants. The abundance of algae was probably due to attempts at changing the pH of the lake by "liming" the lake during the winter, a practice employed by fishery programs as a management tool.

#### SUMMARY

For phytogeographic reasons it is prudent to consider that there are only two populations of *Sclerolepis uniflora* occurring in New England, one at Lake Massasecum, Bradford, New Hampshire, and the other at Wallum Lake, on the Massachusetts-Rhode Island state border. From a rare species habitat preservation point of view, we need to acknowledge that this species occurs in three New England states, Rhode Island, Massachusetts, and New Hampshire, and work to protect these habitats accordingly.

One fact is worthy of note for field botanists looking for this species in New England. I have observed abundant material of the aquatic, submerged form of this species occurring at both sites. This form only distantly resembles the emergent, erect plants with the stems of the aquatic form being longer and the leaves more loosely arranged. Fernald (1950) mentions parenthetically that the leaves are "in water flaccid and elongated." All too frequently we look for only the more easily observed flowering material; new stations for this species might be realized if floating aquatics in potential ponds are looked at closely. Investigations of drift lines at the windward ends of ponds or in coves where plant parts of such genera as *Myriophyllum*, *Vallisneria*, and *Potamogeton* can be found may prove fruitful.

#### ACKNOWLEDGMENTS

I would like to thank J. Dowhan, W. Linke, G. Mehrhoff, and O. Oliynyk for assistance in the field work; D. Dunlop and B. Sorrie for sharing their field observations with me; and G. Crow, G. Mehrhoff, and E. Pacala for their helpful comments on earlier drafts of this manuscript.

## LITERATURE CITED

- CHURCH, G. L. & R. L. CHAMPLIN. 1978. Rare and endangered vascular plant species in Rhode Island. The New England Botanical Club in cooperation with the U.S. Fish & Wildlife Service. [Newton Corner, MA] 17 pp.
- CODDINGTON, J., & K. G. FIELD. 1978. Rare and endangered vascular plant species in Massachusetts. The New England Botanical Club in cooperation with the U.S. Fish & Wildlife Service. [Newton Corner, MA] 51 pp.
- COLLINS, J. F. 1910. *Sclerolepis uniflora* in Rhode Island. *Rhodora* **12**: 13.
- FERNALD, M. L. 1912. *Sclerolepis uniflora* in Massachusetts. *Rhodora* **14**: 23-24.
- . 1950. Gray's manual of botany, eighth edition. American Book Company, New York. 1361 pp.
- GLEASON, H. A., & A. CRONQUIST. 1963. Manual of vascular plants of northeastern United States and adjacent Canada. D. Van Nostrand Co. New York.
- KNOWLTON, C. J., C. A. WEATHERBY, & W. S. RIPEY. 1925. Preliminary lists of New England plants - XXIX. *Rhodora* **27**: 57-64.
- LEWIS, F. T. 1905. *Sclerolepis* in New Hampshire. *Rhodora* **7**: 186-187.
- SEYMOUR, F. C. 1969. The flora of New England. Charles E. Tuttle, Inc. Rutland. 519 pp.
- STUCKEY, I. H. 1977. Endangered plants of Rhode Island. Contribution No. 1794. University of Rhode Island Agricultural Experiment Station. Kingston, RI. 28 pp.
- SVENSON, H. K. 1929. *Chamaecyparis thyoides* in New Hampshire. *Rhodora* **31**: 96-98.

CONNECTICUT GEOLOGICAL & NATURAL HISTORY SURVEY  
MUSEUM OF NATURAL HISTORY  
BOX U-42  
THE UNIVERSITY OF CONNECTICUT  
STORRS, CT 06268